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THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. A method of generating power via a gas turbine and a steam turbine which comprises:

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(a) supplying coal bed methane, an oxygen-containing gas, and flue gas produced in the gas turbine, all under pressure, to a combustor of the gas turbine and combusting the coal bed methane and using the heated combustion products and the flue gas to drive the gas turbine;

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(b) supplying a hot flue gas stream produced in the gas turbine to a heat recovery steam generator and using the heat of the flue gas to generate steam by way of heat exchange with water supplied to the steam generator;

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(c) supplying steam from the steam generator to a steam turbine and using the steam to drive the steam turbine; and

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(d) supplying (i) a part of the flue gas stream from the gas turbine that passes through the heat recovery steam generator to the combustor of the gas turbine and (ii) another part of the flue gas stream from the gas turbine that passes through the heat recovery steam generator to a suitable underground storage region.

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2. The method defined in claim 1 wherein the oxygen-containing gas supplied to the combustor of the gas turbine is oxygen.

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3. The method defined in claim 1 or claim 2 wherein the flue gas stream supplied to the combustor of the gas turbine is predominantly CO₂.
- 5 4. The method defined in any one of the preceding claims wherein step (d) includes supplying part of the CO₂-containing flue gas stream to the combustor of the gas turbine and the remainder of the flue gas stream to the underground storage.
- 10 5. The method defined in any one of the preceding claims wherein step (d) includes supplying the flue gas stream to the underground storage region as a liquid phase.
- 15 6. The method defined in any one of the preceding claims wherein the underground storage region is a coal bed seam.
- 20 7. The method defined in claim 6 wherein the underground storage region is the coal bed seam from which coal bed methane to power the gas turbine is extracted.
- 25 8. The method defined in claim 7 wherein step (d) includes supplying the flue gas stream to the underground storage region via existing well structures for extracting coal bed methane from the underground storage region.
- 30 9. The method defined in any one of the preceding claims wherein step (d) includes separating water from the flue gas.
10. The method defined in any one of the preceding claims wherein step (d) includes:
- 35 (i) compressing the flue gas stream to a first pressure (typically 20-30 bar); and

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- (ii) supplying one part of the compressed flue gas stream to the combustor of the gas turbine.

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11. The method defined in claim 10 wherein step (d) further includes:

- (i) compressing another part of the compressed flue gas stream to a second, higher pressure (typically at least 70 bar, more typically at least 73 bar);
- (ii) cooling the pressurised flue gas stream from step (i) and forming a liquid phase; and
- (iii) supplying the liquid phase to the underground storage region.

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12. An apparatus for generating power via a gas turbine and a steam turbine which comprises:

- (a) a gas turbine;
- (b) a means for supplying coal bed methane, an oxygen-containing gas, and flue gas produced in the gas turbine, all under pressure, to a combustor of the gas turbine for combusting the coal bed methane and using the heated combustion products and the flue gas to drive the gas turbine;
- (c) a heat recovery steam generator for generating steam from water supplied to the steam generator by way of heat exchange with a flue gas from the gas turbine;

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- (d) a steam turbine adapted to be driven by steam generated in the steam generator;
- 5 (e) a means for supplying (i) one part of a flue gas stream from the gas turbine that passes through the heat recovery steam generator to the combustor of the gas turbine and (ii) another part of the flue
- 10 gas stream from the gas turbine that passes through the heat recovery steam generator to a suitable underground storage region.
13. The apparatus defined in claim 12 wherein the
- 15 means for supplying one part of the flue gas stream to the combustor of the gas turbine and another part of the flue gas stream to the suitable underground storage region includes a means for converting the flue gas from a gas
- 20 phase into a liquid phase to be supplied to the underground storage region.
14. The apparatus defined in claim 12 or claim 13 wherein, in a situation in which the oxygen-containing gas for the combustor of the gas turbine includes oxygen, the
- 25 apparatus further includes an oxygen plant for producing oxygen.